Wildlife Letters

WILEY

Wildlife Letters

FORUM OPEN ACCESS

Hopes and Fears for Incentivising Coexistence With Big Cats Through Innovative Market-Based Financial Mechanisms

Harrison Carter[1,2] | Chrishen Gomez[1] | Shreya Ray[1,3] | Clara Lepard[1] | Yolanda Mutinhima[4] | Lovemore Sibanda[1] | Alayne Cotterill[1,5] | Egil Droge[1] | Darragh Hare[1,6] | Amy Dickman[1,5]

[1]Wildlife Conservation Research Unit (WildCRU), Department of Biology, University of Oxford, Oxford, UK | [2]Nature Positive Hub, Department of Biology, University of Oxford, Oxford, UK | [3]Centre for Wildlife Studies, Yellappa Chetty Layout, Bengaluru, Karnataka, India | [4]Department of Wildlife Ecology and Conservation, Chinhoyi University of Technology, Chinhoyi, Zimbabwe | [5]Lion Landscapes, Teignmouth, UK | [6]Department of Natural Resources and the Environment, Cornell University, Ithaca, New York, USA

Correspondence: Harrison Carter (harrison.carter@biology.ox.ac.uk)

Received: 15 October 2024 | **Revised:** 31 January 2025 | **Accepted:** 7 February 2025

Funding: H.C. was supported by the UKRI's Engineering & Physical Sciences Research Council's Doctoral Training Programme. C.G. acknowledges support from Sime Derby Foundation and National Geographic Society. S.R. acknowledges support from the Centre for Wildlife Studies and Rufford Foundation. D.H. acknowledges support Jamma International, WWF Germany, and the BAND Foundation. A.D. acknowledges support from a Recanati Kaplan Fellowship.

Keywords: biodiversity finance | carnivores | coexistence | conservation | conservation impact bonds

ABSTRACT

There is increasing global interest in developing market-based financial mechanisms to direct greater private capital funding into biodiversity conservation. Additional funding derived through credit or bond-based products can offer hope to improve local cost:benefit ratios of wildlife presence and incentivize coexistence. However, conservation is complex, and we fear these mechanisms carry risks of unintended consequences, particularly where conservation metrics are insufficiently thought through, and locally affected communities are not equitably engaged. Here, we outline our perspective of these hopes and fears, with a particular focus on big cat conservation, conflict and coexistence. We encourage conservation scientists, practitioners, and community members not to cede the development of these mechanisms completely to financial experts or standard setters, but to take a more active role in learning, offering critique, and supporting the engagement of Indigenous Peoples and Local Communities. This engagement is vital to managing risk head on and maximizing the potential benefit of these mechanisms for human-big cat coexistence.

1 | Introduction

Biodiversity is in crisis, with over a million species threatened with extinction (IPBES 2019). Effective action to halt and reverse biodiversity loss is hampered by an annual global funding gap estimated in the region of US$598–824 billion (United Nations Environment Programme 2023). Given this underfunding, focusing on iconic top predators like big cats could have positive impacts due to their wide-ranging and diverse habitats alongside broad public appeal (Macdonald et al. 2015). While the causal mechanisms linking biodiversity and big cat presence remains a topic of discussion (Sergio et al. 2008), their efficacy as a biodiversity indicator is well evidenced and supported (Natsukawa and Sergio 2022). The compounding benefits of big cat conservation on biodiversity may also have co-benefits for climate change mitigation as well (Lamba et al. 2023). Big cats are under intense pressure: tigers (*Panthera tigris*), lions (*P. leo*) and cheetahs (*Acinonyx jubatus*) have all disappeared from 90% or more of their historic range (Wolf and Ripple 2017), while even relatively resilient species such as leopards (*P. pardus*) are experiencing substantial declines in range and population (IUCN 2024). The main

Summary

Practitioner Points

- Innovative market-based financial mechanisms offer the potential for additional private finance to support human-wildlife coexistence, but carry significant risks worthy of prior consideration.
- Key considerations include not only the conservation metrics used to measure project success, but the early and ongoing engagement of affected stakeholders with equitable distribution of benefits in line with costs incurred.
- Interest in market-based financial mechanisms are proliferating: it is imperative that conservationists and locally affected communities are equitably involved in their design and development to minimize risks and maximize the potential for positive outcomes.

threats facing big cats include loss of wild habitat, wild prey, and increased conflict with people (IUCN 2024), while illegal trade can also threaten some species and populations (Morcatty et al. 2020). Many of these threats have socio-economic drivers: maintaining wild areas and species is often less economically attractive than other land uses (König et al. 2020), while economic inequality can intensify illegal hunting and human-big cat conflict (Inskip and Zimmermann 2009; Lunstrum and Givá 2020).

Innovative market-based financial mechanisms such as biodiversity credits or conservation impact bonds offer hope for big cat conservation: they could direct more private funding toward conservation interventions alongside traditional funding routes, and increase local incentives for engagement (Convention on Biological Diversity 2023). Under the Kunming-Montreal agreement, these mechanisms are expected to help mobilize an additional US$200 billion for biodiversity recovery by 2030. While it is still too early to assess the drivers and scale of demand for biodiversity credits as contributions rather than offsets, industry enthusiasm for future biodiversity credit markets is growing, with buoyant projections speculating an annual demand of $69 billion by 2050 (World Economic Forum 2024). A conservation impact bond has already been issued for US$150 million to support black rhino (*Diceros bicornis*) conservation in two conservancies in South Africa (The World Bank 2022), with additional bond-based products now in development for lions and African wild dogs (*Lycaon pictus*) (Sguazzin 2024). If well-designed, these kinds of financial products could generate additional funding to support locally relevant conservation interventions to reduce conflict with big cats, such as building livestock bomas or community engagement, and provide an economic incentive to maintain the presence of big cats and their habitats.

Biodiversity finance is complex and hotly contested. Credit markets have reduced the dynamic complexity of biodiversity to a single tradable unit, where bonds have turned species population growth into an investable product. Drawing attention to the technical measurement challenges underpinning claims of additional impact (Wauchope et al. 2024; Thompson 2023), it is crucial that these products are not used to offset losses elsewhere. Instead, clear and appropriate contribution-based claims must be established to ensure private markets can play a legitimate role in supporting nature recovery. These financial mechanisms are supported within the global biodiversity framework and cannot be ignored as they gain momentum (Convention on Biological Diversity 2023). As conservation scientists and practitioners working on coexistence with big cats, we recognize the potential for private finance to reduce the conservation funding gap, increase the local value of wildlife, and improve human coexistence with big cats. Still, we are cautious of their potential for delivering unintended outcomes. Here we outline some of our hopes and fears, with a particular focus on big cat conservation, conflict, and coexistence.

2 | Fears

Human-wildlife coexistence is fundamentally about the realities and perceptions of affected communities (Dickman 2010), so the potential success of any financial mechanism aimed at coexistence depends on several factors, including (i) all stakeholders feeling informed and engaged in conservation interventions; (ii) conservation metrics being locally appropriate and well-designed; and (iii) people receiving benefits they feel are valuable and fair, with those who bear the greatest costs from wildlife receiving most benefits. There are other fears worth discussing around nature markets, including the challenge of detecting additionality of outcomes relative to suitable counterfactual estimations (Swinfield et al. 2024), but in this short paper we focus on these three factors and the challenges they pose for incentivising coexistence with big cats through innovative market-based financial mechanisms.

2.1 | Stakeholder Information and Engagement

Financial mechanisms like biodiversity credits and conservation impact bonds can be hard to fully comprehend for people with little or no financial expertise (including many conservation professionals) (Scholtens 2017). In many areas where mechanisms aimed at big cat conservation are most needed, Indigenous Peoples and Local Communities (IPLCs) often face economic hardship and limited access to formal education (Braczkowski et al. 2023), limiting a deeper awareness of financial markets and risks. Substantial structural power imbalances usually exist too, where the implementation of financial mechanisms by distant elites could increase the costs of coexistence borne by more vulnerable IPLCs (Green et al. 2018). Previous crediting projects have resulted in the forced eviction of communities from their ancestral land, and removed or reduced access to essential natural resources supporting local livelihoods, threatening relations with project developers alongside the potential for positive conservation outcomes (Cavanagh and Benjaminsen 2014; Bidaud et al. 2017). So, does this mean affected stakeholders can *never* be informed and engaged with market-based mechanisms in a suitable way?

Not necessarily. These fears may also be seen as paternalistic, conflicting with IPLCs' right to self-determination (Assembly 2007; Sena et al. 2024). IPLC stakeholders have the right to

participate in economic activities on their land, and make these decisions on their own terms (Newing 2024). Whilst free, prior, and informed consent (FPIC) processes are vital to help safeguard rights and empower IPLCs to engage, they are often insufficient in practice without independent support (Tomlinson 2019). Power dynamics, distrust, differences in communication, and contrasting values all threaten robust consent agreements (Sterling et al. 2017). Meaningful engagement is not just about achieving new "tick box" agreements; it is an ongoing process to respect and uphold IPLC rights that enable optimum conservation outcomes and equity (Newing 2024). It should promote the early engagement of IPLCs in the co-development and ongoing management of agreed conservation interventions, rather than simply post-hoc information-sharing (McDermott et al. 2013). This process is essential to ensure that mechanisms address locally relevant problems through locally relevant means, driving the adoption of community interventions (Denninger Snyder and Rentsch 2020; Carter et al. 2024) and building trust among stakeholders to support sustainable collaboration in management decisions (Davis and Goldman 2019).

Ultimately, there is no shortcut to meaningful engagement with affected stakeholders, which requires trust, and therefore, substantial time—often many years. In the rush to get biodiversity finance mechanisms out to market, we fear that finance developers may underestimate the critical importance of this step and not give it the time and resources needed. But that would be a false economy; without the meaningful engagement of all stakeholders in project design and management, it is likely conservation interventions may only be successful in the short term, if at all.

2.2 | Appropriate, Well-Designed Conservation Metrics

Determining the "right" metrics for biodiversity credits or conservation impact bonds is one of the most central and contested aspects of biodiversity financing (Thompson 2023; Wauchope et al. 2024). Both credit and bond-based mechanisms aim to deliver biodiversity-positive outcomes, and are designed for application in a range of differant ecosystems (Brand et al. 2021; Wauchope et al. 2024). Credit units are either framed in the context of biodiversity restored or conserved (Wauchope et al. 2024), where outcomes from impact bonds are more bespoke and project specific (Thompson 2023). Specific metrics are used to quantify biodiversity outcomes, and define a unit measure of value.

A range of methodologies exist in the voluntary biodiversity credit market, but just two general approaches used to derive a single unit of nature. The first involves taking a range of different biodiversity metrics including metrics such as species richness and ecosystem intactness, before combining them into one unit measure of biodiversity; often referred to as a 'basket of metrics' approach. The second approach circumnavigates this complexity by assessing the presence or absence of certain indicator species as a binary proxy metric of ecosystem health (Wauchope et al. 2024). The only conservation impact bond currently developed also opted for simplicity, using population growth rates of black rhino as the metric to quantify biodiversity outcomes (Medina and Scales 2024). However, the fundamental value of investment outcomes are partially underpinned by the selection of locally appropriate metrics and their statistical treatment (Wauchope et al. 2024).

More sophisticated composite indicator metrics, such as ecosystem intactness, should reward the conservation of a diverse assemblage of species, including carnivores in relevant project areas. However, the selection of species that comprise composite indicators can be subjective in credit markets and geared towards species that are easier to observe (Duffus et al. 2024). This means big cats could be excluded from a wider ecosystem-based metric if they are harder to observe relative to other species. Where included, the statistical treatment of species data could equate big cat data with losses or gains in another species group (Greco et al. 2019). As such, a potential decline or resurgence in the big cat population may be underrepresented or disregarded completely unless specifically targeted. However, overly simplistic conservation metrics like population growth rates of big cats could also deliver unintended negative outcomes. For example, a financial mechanism focused particularly or exclusively on lion population numbers could have negative impacts on the wider ecosystem, and potentially incentivise a highly managed "lion farm" approach rather than supporting the resilient large landscapes that lion presence should represent (Nicholson et al. 2023). A sole focus on big cat numbers may not only destabilize ecosystem balance, but also harm people in the event of increased livestock depredation and conflict (Inskip and Zimmermann 2009).

Whilst there is no "silver bullet" approach to appropriate and well designed conservation metrics, a locally developed theory of change may elicit pragmatic interventions and a diverse selection of suitable metrics to deliver and quantify positive big cat conservation outcomes. This is likely to include additional ecological metrics such as species occupancy and population density alongside population size, whilst considering metrics for wild prey andsocial conflict data. Greater importance must then be given to impact evaluations to ensure interventions are having the desired effect on big cat conservation outcomes, and ensure the appropriate use of funds (Hamm et al. 2025).

2.3 | Ensuring That the Costs and Benefits of Financial Mechanisms Match the Costs and Benefits of Big Cat Presence

Even within affected areas, the costs of coexisting with big cats are not equally distributed. Big cats tend to impose the most costs on people who keep livestock and those facing economic inequality (Lunstrum and Givá 2020). Lions have been documented attacking people who are outside their home at night because they do not have an indoor toilet, and those who use makeshift shelters in crop fields to chase bushpigs away (Packer et al. 2005), while tigers tend to attack people who enter forests to find resources such as honey (Das 2018). Unfortunately, it is often the same groups of people who are most marginalized and least likely to be equitably included in formal community decision-making (Rudd et al. 2021). For example, traditional pastoralists in Tanzania often experience relatively severe conflict with big cats and play a significant role in killing them, but are

often left out of key decision-making processes within local structures (Kimaro and Hughes 2023). If the needs of such people are not equitably considered in the design and distribution of benefits, any financial mechanism hoping to deliver positive conservation outcomes may exacerbate inequality and conflict between people and big cats instead. The local political landscape must be assessed before any financial mechanism is introduced to support the equitable distribution of benefits and mitigate unintended outcomes for coexistence.

Another political aspect is the "elite capture" of benefits, where the majority of financial benefits are retained by a smaller and more influential portion of society. These power imbalances can take place at a local and national scale (Shackleton et al. 2023). However, if market-based financial mechanisms are to truly improve coexistence, then most revenue must go to—and be recognized by—those who bear the costs of big cat presence (Braczkowski et al. 2023). This presents a challenging dynamic in areas with big cats, especially as traditional pastoralist communities and poorer stakeholders who experience the most conflict often have the least secure land rights (Davis and Goldman 2019). Uncertain land tenure is likely to reduce the potential for investment in the absence of a clear legal mandate to deliver project interventions over the contract length (Alvarado-Quesada et al. 2014; Löfqvist et al. 2023). Whilst developers of financial mechanisms can work with IPLCs to help secure land tenure rights (Davis and Goldman 2019), this process is long and potentially less appealing to developers themselves. It may also lead to unintended conflict, where land owned by IPLCs suffers the costs of government-owned wildlife without local agency in management practices (Bond and Mkutu 2018). These factors suggest investment may not flow to the places with the highest-quality big cat habitat or the greatest need for funding, but to places with stronger governance and secure land tenure.

Even if immediate issues over wildlife ownership, land tenure, and equitable distribution of benefits are adequately resolved, coexistence pressures are dynamic and change over time (König et al. 2020). If a defined group of beneficiaries receives benefits from growing wildlife populations, it is unclear how increased wildlife and potentially dangerous wildlife will impact neighboring communities that are not receiving those benefits. Even an equitable distribution of benefits could still eventually harm human-wildlife coexistence. For example, pastoralist communities may use financial payments to invest in additional livestock as their principal commodity of financial wealth and livelihood (Homewood et al. 2012). This could exacerbate biodiversity loss, and increase conflict events with greater numbers of livestock and big cats relative to wild prey in the absence of effective conservation interventions. Interacting political, economic, cultural, and ecological aspects should be fully considered and openly discussed before implementing financial mechanisms for incentivising coexistence with big cats and monitored throughout their lifecycle.

3 | Summary and Hopes for Future Development

The points above only give a snapshot of some complexities involved in developing and implementing these products. These issues are not limited to development and implementation: what happens long-term is also important to consider. Impact bonds, for example, will only provide capital until the bond reaches maturity (Thompson 2023), creating the need to transition to other revenue-generating activities to secure sustainable conservation finance. Equally, whilst revenue from biodiversity credits to local communities could improve human-wildlife coexistence, cessation of that revenue or significant price fluctuations as observed in the voluntary carbon market (Badgley et al. 2022) could potentially spark conflict and engender distrust in future conservation work. This underlines why—as exciting as market-based financial mechanisms can be—they should not be seen as a replacement for existing multilateral and bilateral financial flows: the conservation funding gap is so significant that state aid, philanthropy, and tourism revenue will all remain extremely important to provide long-term financial support.

It is easy to feel daunted by the diverse risks associated with the proliferation of market-based financial mechanisms. But rather than fears leading conservationists to avoid these discussions and products, they should be the key reason for engaging early. Conservation scientists hold significant influence over the behaviour of nature markets (Ecosystem Marketplace 2024) and must come together now to ensure that financial products are designed with robust socially-integrated conservation metrics and evaluations that allow for ongoing development and learning (Milner-Gulland 2024).

Ultimately, current market-based financial mechanisms come with a set of risks, but these should not overshadow the hope that greater private finance could generate substantially more money for conservation, and lead to a system where IPLCs fairly benefit from living alongside potentially dangerous wildlife. Proper conservation expertise and equitable collaboration will be required to ensure markets *value nature*, rather than simply developing *measures of nature*. Whilst it may be off-putting to engage with financial stakeholders on account of technical jargon or feeling it is somehow "not their place" (Medina and Scales 2024), it is crucial that conservationists do so. Fully engaging in the development of these products and contributing expertise about the local nuances of conservation will maximize the chances of success of these products, improve the future outlook for both people and wildlife, and ensure that our hopes and not our fears are realized.

Author Contributions

Harrison Carter: conceptualization (lead), investigation (equal), project administration (lead), writing – original draft (lead), writing – review and editing (equal). **Chrishen Gomez:** conceptualization (equal), investigation (equal), writing – original draft (supporting), writing – review and editing (equal). **Shreya Ray:** conceptualization (supporting), investigation (supporting), writing – original draft (supporting), writing – review and editing (equal). **Clara Lepard:** conceptualization (supporting), investigation (supporting), writing – original draft (supporting), writing – review and editing (equal). **Yolanda Mutinhima:** investigation (supporting), writing – review and editing (equal). **Lovemore Sibanda:** investigation (supporting), writing – review and editing (equal). **Alayne Cotterill:** conceptualization (equal), investigation (supporting), writing – original draft (supporting), writing – review and editing (equal). **Egil Droge:** conceptualization (supporting), investigation (supporting), writing – original draft

(supporting), writing – review and editing (equal). **Darragh Hare:** conceptualization (equal), investigation (supporting), writing – original draft (supporting), writing – review and editing (equal). **Amy Dickman:** conceptualization (equal), investigation (equal), project administration (equal), supervision (lead), writing – original draft (equal), writing – review and editing (lead).

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The authors have nothing to report.

References

Alvarado-Quesada, I., L. Hein, and H.-P. Weikard. 2014. "Market-Based Mechanisms for Biodiversity Conservation: A Review of Existing Schemes and an Outline for a Global Mechanism." *Biodiversity and Conservation* 23: 1–21.

Assembly, U. G. 2007. "United Nations Declaration on the Rights of Indigenous Peoples." *UN Wash* 12: 1–18.

Badgley, G., J. Freeman, J. J. Hamman, et al. 2022. "Systematic Over-Crediting in California's Forest Carbon Offsets Program." *Global Change Biology* 28: 1433–1445.

Bidaud, C., K. Schreckenberg, M. Rabeharison, P. Ranjatson, J. Gibbons, and J. G. Jones. 2017. "The Sweet and the Bitter: Intertwined Positive and Negative Social Impacts of a Biodiversity Offset." *Conservation and Society* 15: 1–13.

Biodiversity Credit Alliance. 2024. Definition of a Biodiversity Credit. Issue Paper.

Bond, J., and K. Mkutu. 2018. "Exploring the Hidden Costs of Human–Wildlife Conflict in Northern Kenya." *African Studies Review* 61: 33–54.

Braczkowski, A. R., C. J. O'Bryan, C. Lessmann, et al. 2023. "The Unequal Burden of Human-Wildlife Conflict." *Communications Biology* 6: 182.

Brand, M. W., K. Q. Seipp, P. Saksa, et al. 2021. "Environmental Impact Bonds: A Common Framework and Looking Ahead." *Environmental Research: Infrastructure and Sustainability* 1: 023001.

Carter, H., X. Glaudas, R. Whitaker, G. Chandrasekharun, K. Hockings, and A. Nuno. 2024. "Venomous Snakebites: Exploring Social Barriers and Opportunities for the Adoption of Prevention Measures." *Conservation Science and Practice* 6: e13063.

Cavanagh, C., and T. A. Benjaminsen. 2014. "Virtual Nature, Violent Accumulation: The 'Spectacular Failure' of Carbon Offsetting at a Ugandan National Park." *Geoforum* 56: 55–65.

Convention on Biological Diversity. 2023. The Biodiversity Plan for Life on Earth, 2030 Targets (With Guidance Notes), Convention on Biological Diversity. Accessed January 3, 2024. https://www.cbd.int/gbf/targets/.

Das, C. S. 2018. "Pattern and Characterisation of Human Casualties in Sundarban by Tiger Attacks, India." *Sustainable Forestry* 1: 1–10.

Davis, A., and M. J. Goldman. 2019. "Beyond Payments for Ecosystem Services: Considerations of Trust, Livelihoods and Tenure Security in Community-Based Conservation Projects." *Oryx* 53: 491–496.

Denninger Snyder, K., and D. Rentsch. 2020. "Rethinking Assessment of Success of Mitigation Strategies for Elephant-Induced Crop Damage." *Conservation Biology* 34: 829–842.

Dickman, A. J. 2010. "Complexities of Conflict: The Importance of Considering Social Factors for Effectively Resolving Human–Wildlife Conflict." *Animal Conservation* 13: 458–466.

Duffus, N. E., T. B. Atkins, S. O. zu Ermgassen, et al. 2024. "Metrics Based on Habitat Area and Condition Are Poor Proxies for Invertebrate Biodiversity." *bioRxiv*.

Ecosystem Marketplace. 2024. New Report: The Voluntary Carbon Market Contracted in 2023, Driven by Drop-off in Transactions for REDD+ and Renewable Energy, Accessed July 19, 2024. https://www.ecosystemmarketplace.com/articles/report-the-voluntary-carbon-market-contracted-in-2023-driven-by-drop-off-in-transactions-for-redd-and-renewable-energy/.

Greco, S., A. Ishizaka, M. Tasiou, and G. Torrisi. 2019. "On the Methodological Framework of Composite Indices: A Review of the Issues of Weighting, Aggregation, and Robustness." *Social Indicators Research* 141: 61–94.

Green, J. M. H., B. Fisher, R. E. Green, et al. 2018. "Local Costs of Conservation Exceed Those Borne by the Global Majority." *Global Ecology and Conservation* 14: e00385.

Hamm, J., G. Holmes, M. B. Mabele, and J. Martin-Ortega. 2025. "Milking the Lions": An Analysis of Conservation Performance Payments in Eastern and Southern Africa." *Conservation Science and Practice*: e70015.

Homewood, K. M., P. C. Trench, and D. Brockington. 2012. "Pastoralist Livelihoods and Wildlife Revenues in East Africa: A Case for Coexistence? Pastoralism: Research." *Policy and Practice* 2: 1–23.

Inskip, C., and A. Zimmermann. 2009. "Human-Felid Conflict: A Review of Patterns and Priorities Worldwide." *Oryx* 43: 18–34.

IPBES. 2019. "Nature's Dangerous Decline 'Unprecedented'; Species Extinction Rates 'Accelerating'." *IPBES Media Release*. Accessed February 1, 2024. https://www.ipbes.net/news/Media-Release-Global-Assessment.

IUCN. 2024. International Union for Conservation of Nature Red List, International Union for Conservation of Nature, Species search: *Panthera tigris*, *Panthera pardus*, *Acinonyx jubatus* and *Panthera leo*. Accessed October 10, 2024. https://www.iucnredlist.org/search.

Kimaro, M. H., and C. Hughes. 2023. "Conditions of Conflict: Exploring Pastoralist Resettlement in Relation to African Lion Conservation." *Society & Natural Resources* : 1–22. https://www.tandfonline.com/doi/full/10.1080/08941920.2023.2263861?scroll=top&needAccess=true#abstract.

König, H. J., C. Kiffner, S. Kramer-Schadt, C. Fürst, O. Keuling, and A. T. Ford. 2020. "Human–Wildlife Coexistence in a Changing World." *Conservation Biology* 34: 786–794.

Lamba, A., H. C. Teo, R. Sreekar, Y. Zeng, L. R. Carrasco, and L. P. Koh. 2023. "Climate Co-Benefits of Tiger Conservation." *Nature Ecology & Evolution* 7: 1104–1113.

Löfqvist, S., R. D. Garrett, and J. Ghazoul. 2023. "Incentives and Barriers to Private Finance for Forest and Landscape Restoration." *Nature Ecology & Evolution* 7: 707–715.

Lunstrum, E., and N. Givá. 2020. "What Drives Commercial Poaching? From Poverty to Economic Inequality." *Biological Conservation* 245: 108505.

Macdonald, E. A., D. Burnham, A. E. Hinks, A. J. Dickman, Y. Malhi, and D. W. Macdonald. 2015. "Conservation Inequality and the Charismatic Cat: Felis Felicis." *Global Ecology and Conservation* 3: 851–866.

Maron, M., J. W. Bull, M. C. Evans, and A. Gordon. 2015. "Locking in Loss: Baselines of Decline in Australian Biodiversity Offset Policies." *Biological Conservation* 192: 504–512.

McDermott, M., S. Mahanty, and K. Schreckenberg. 2013. "Examining Equity: A Multidimensional Framework for Assessing Equity in Payments for Ecosystem Services." *Environmental Science & Policy* 33: 416–427.

Medina, C., and I. R. Scales. 2024. "Finance and Biodiversity Conservation: Insights From Rhinoceros Conservation and the First Wildlife Conservation Bond." *Oryx* 58: 90–99.

Milner-Gulland, E. J. 2024. "Now Is the Time for Conservationists to Stand up for Social Justice." *PLoS Biology* 22: e3002657.

Morcatty, T. Q., J. C. Bausch Macedo, K. A. I. Nekaris, et al. 2020. "Illegal Trade in Wild Cats and Its Link to Chinese-Led Development in Central and South America." *Conservation Biology* 34: 1525–1535.

Natsukawa, H., and F. Sergio. 2022. "Top Predators as Biodiversity Indicators: A Meta-Analysis." *Ecology Letters* 25: 2062–2075.

Newing, H., A. A. Prado, and S. Brittain, et al. 2024. "Conservation and Human Rights: An introduction." The Interdisciplinary Centre for Conservation Science (ICCS), Oxford UK and Forest Peoples Programme (FPP), Moreton in Marsh, UK.

Nicholson, S. K., A. Dickman, A. Hinks, et al. 2023. "Socio-Political and Ecological Fragility of Threatened, Free-Ranging African Lion Populations." *Communications Earth & Environment* 4: 302.

Packer, C., D. Ikanda, B. Kissui, and H. Kushnir. 2005. "Lion Attacks on Humans in Tanzania." *Nature* 436: 927–928.

Rudd, L. F., S. Allred, J. G. Bright Ross, et al. 2021. "Overcoming Racism in the Twin Spheres of Conservation Science and Practice." *Proceedings of the Royal Society B: Biological Sciences* 288: 20211871.

Scholtens, B. 2017. "Why Finance Should Care About Ecology." *Trends in Ecology & Evolution* 32: 500–505.

Sena, K., L. B. L. Lelya, and A. M. Page 2024. Indigenous communities can decide for themselves on carbon market risks (commentary), Mongabay. Accessed October 3, 2024. https://news.mongabay.com/2024/09/indigenous-communities-and-can-decide-for-themselves-on-carbon-market-risks-commentary/.

Sergio, F., T. Caro, D. Brown, et al. 2008. "Top Predators as Conservation Tools: Ecological Rationale, Assumptions, and Efficacy." *Annual Review of Ecology, Evolution, and Systematics* 39: 1–19.

Sguazzin, A. 2024. Wildlife Bonds to Help Lions and Wild Dogs in Africa, Bloomberg UK. Accessed October 1, 2024. https://www.bloomberg.com/news/articles/2024-05-23/wildlife-bonds-to-help-lions-and-dogs-as-rmb-mimics-world-bank?embedded-checkout=true.

Shackleton, R. T., G. Walters, J. Bluwstein, et al. 2023. "Navigating Power in Conservation." *Conservation Science and Practice* 5: e12877.

Sterling, E. J., E. Betley, A. Sigouin, et al. 2017. "Assessing the Evidence for Stakeholder Engagement in Biodiversity Conservation." *Biological Conservation* 209: 159–171.

Swinfield, T., S. Shrikanth, J. W. Bull, A. Madhavapeddy, and S. O. S. E. zu Ermgassen. 2024. "Nature-Based Credit Markets at a Crossroads." *Nature Sustainability* 7: 1217–1220.

The World Bank. 2022. Wildlife Conservation Bond Mobilizes Private Capital to Protect Critically Endangered Rhinos: Case Study. Accessed November 17, 2024. https://thedocs.worldbank.org/en/doc/7039bd837e60e484fb3a93ea63951306-0340022022/original/CaseStudy-WildlifeConservationBond.pdf.

Thompson, B. S. 2023. "Impact Investing in Biodiversity Conservation With Bonds: An Analysis of Financial and Environmental Risk." *Business Strategy and the Environment* 32: 353–368.

Tomlinson, K. 2019. "Indigenous Rights and Extractive Resource Projects: Negotiations Over the Policy and Implementation of FPIC." *International Journal of Human Rights* 23: 880–897.

United Nations Environment Programme. 2023. State of Finance for Nature: The Big Nature Turnaround–Repurposing $7 Trillion to Combat Nature Loss, Nairobi. Accessed July 17, 2024. https://wedocs.unep.org/handle/20.500.11822/44278.

Wauchope, H., S. Zu Ermgassen, J. Jones, H. Carter, H. Schulte to Bühne, and E. Milner-Gulland. 2024. "What Is a Unit of Nature? Measurement Challenges in the Emerging Biodiversity Credit Market." *Proceedings of the Royal Society B: Biological Sciences* 291: 20242353.

Wolf, C., and W. J. Ripple. 2017. "Range Contractions of the World's Large Carnivores." *Royal Society Open Science* 4: 170052.

World Economic Forum. 2024. Biodiversity Credits Initiative, World Economic Forum. Accessed February 2, 2024. https://initiatives.weforum.org/financing-for-nature/home.